

## CLAIMS

1. (New) Apparatus for delivery and deployment of a stent within a vessel, the stent being expandable from a delivery diameter to a deployed diameter, the apparatus comprising:

a catheter having a proximal end and a distal end;

an expandable means mounted at the distal end of the catheter and being expandable by means of a fluid pressure device, the expandable means configured to permit mounting of the stent thereon;

a sheath configured to be advanced over the stent and being arranged for proximal retraction to expose the stent by means of a retraction device,

wherein the fluid pressure device is further arranged to operate the retraction device so that the expandable means is expanded in response to the retraction of the sheath.

2. (New) The apparatus according to claim 1, wherein the retraction device comprises a cylinder-piston arrangement operated by the fluid pressure.

3. (New) The apparatus according to claim 1, further comprising a control means for controlling the fluid pressure operating the retraction device and the expandable means, either concurrently or sequentially.

4. (New) The apparatus according to claim 2, wherein a first piston of the cylinder-piston arrangement is connected to the sheath via a wire.

5. (New) The apparatus according to claim 2, wherein the cylinder-piston arrangement comprises an outlet connected

to a fluid pressure line for applying the fluid pressure to the expandable means.

6. (New) The apparatus according to claim 5, wherein the cylinder-piston arrangement comprises a floating second piston for controlling the opening/closing of the outlet.

7. (New) The apparatus according to claim 6, wherein during retraction of the sheath either the first piston or the second piston closes the outlet, and after at least partial retraction of the sheath the first and second pistons are in a position at the proximal end of the cylinder and the outlet is open.

8. (New) The apparatus according to claim 7, wherein the first piston comprises a hook, the second piston comprises a first central opening, the cylinder comprises a second opening and a hook holder at its proximal end, so that during retraction of the sheath movement of the first piston moves the hook through the first opening and the second opening until the hook engages the hook holder.

9. (New) The apparatus according to claim 5, wherein the first piston arrangement comprises a connector means and the cylinder comprises at its proximal end a receiving means for the connector means, so that after retraction of the sheath the connector means engages the receiving means and the outlet is in connection with the fluid pressure acting on the first piston.

10. (New) The apparatus according to claim 4, wherein the cylinder-piston arrangement comprises the first piston and a two-position valve abutting via a spring at the proximal end of the cylinder, wherein in a closed position the valve shuts

by the spring force channels penetrating the wall of the cylinder, and in an open position, the valve opens the channels after it is pushed by the piston when the sheath is retracted and connects a fluid pressure line from the fluid pressure device with a fluid pressure line so that the fluid pressure is applied to the expandable means.

11. (New) Apparatus according to claim 1, wherein the fluid is liquid.